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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/670,466 | 09/26/2003 | Andrey Vyshedskly | | 7399 |
| 7590 | 07/30/2004 | | EXAMINER | |
| Andrey Vyshedskly Suite 4990 1153 Centre St. Boston, MA 02130 | | | PENDLETON, BRIAN T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2644 | |

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|-------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/670,466 | VYSHEDSKLY ET AL. |
| Examiner | Art Unit | |
| Brian T. Pendleton | 2644 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 September 2003.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-11 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 26 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/26/2003</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the microphone, speaker and connector mounted inside a chest piece must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. **Claims 4-11** are objected to because of the following informalities: The wording of these dependent claims is improper. Claims 4, 5 and 8-11, which are directly dependent on claim 1 should have the preamble: "The multimedia adapter of claim 1 wherein ..." Accordingly, claim

6 which is dependent on claim 5 should have the preamble: "The multimedia adapter of claim 5 wherein the bluetooth protocol comprises ..." Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Shyu, US Patent 4,770,189 (hereafter referenced as Shyu).**

Regarding **claim 1**, in figures 1-3, Shyu discloses an acoustic stethoscope having a microphone 1, speakers 6, function and position selector 5, antenna 9 and tubes 15 which reads on "A multimedia adapter to an acoustic stethoscope comprised of: (a) a microphone mounted in the chest piece or tubing for conversion of sounds heard by an operator into an electrical signal and transmission of said electrical signal to a recording device" wherein the antenna 9 is used to transmit sounds to a recording device 40. Figures 1 and 4 disclose the recording device 40 which transmits diagnostic voice data related to the recorded sounds back to the stethoscope as described in column 5 lines 18-65 which reads on "(b) a speaker mounted in the chest piece or tubing for playback of sounds from the recording device" wherein the speakers 6 can reproduce the voice data. As illustrated in figure 3, the stethoscope comprises antenna 9 which reads on "(c) a wired or wireless connector from said microphone and said speaker to the recording device". Figure 2 illustrates that the microphone 1 is in the chest piece of the stethoscope, the

speaker 6 is at the end of the stethoscope and the antenna 9 is part of the stethoscope which reads on “(d) means to hold said microphone, said speaker , and said connector within said acoustic stethoscope”. The function and position selector 5 comprises switches S1-S4 and the stethoscope contains modulator 8, demodulator 10 which reads on “whereby said multimedia adapter will enable said acoustic stethoscope to be used for sound recording and playback” as S3 is used to select the microphone signal for transmission via modulator 8 to the recording device 40 where it is recorded (see column 3 lines 31-34) and S2 is used to turn on the demodulator circuit 10 to receive the signal from the microcomputer 30, which is part of the recording device, for playback through speakers 6.

Regarding **claim 4**, column 4 lines 59-62 disclose that the microphone 1 is a condenser microphone which reads on “the microphone of claim 1 selected from a group consisting of a condenser microphone, an electret microphone, and an accelerometer.”

Regarding **claim 7**, the stethoscope has switch S1, as disclosed in column 3 lines 18-23, which is used to control the on or off state of the modulation transmission circuit 8 which reads on “the multimedia adapter of claim 1 wirelessly connected to the recording device wherein an on/off button located on said multimedia adapter is used to turn wireless connection to said recording device on and off.”

Regarding **claim 10**, figure 4 and column 5 lines 18-40 disclose signal characteristics comparator 321 and symptom diagnoser 322, part of recorder 40, which are used to determine symptoms of a normal sound and diagnose abnormal sounds transmitted by the stethoscope, which read on “the recording device of claim 1 analyzing normal and abnormal sounds.”

5. **Claims 1, 2, 8, and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by DesLauriers et al, US Patent 5,774,563 (hereafter referenced as DesLauriers).

Regarding **claim 1**, in figure 1, DesLauriers discloses a combined electronic acoustical stethoscope comprising main body 35, tubing 25 and earpieces 20. The main body 35, shown in figures 4 and 5, has a microphone 205, speaker 210, electronics 200, which reads on “A multimedia adapter to an acoustic stethoscope comprised of: (a) a microphone mounted in the chest piece or tubing for conversion of sounds heard by an operator into an electrical signal and transmission of said electrical signal to a recording device (b) a speaker mounted in the chest piece or tubing for playback of sounds from the recording device (c) a wired or wireless connector from said microphone and said speaker to the recording device (d) means to hold said microphone, said speaker, and said connector within said acoustic stethoscope” wherein main body 35 represents the chest piece; microphone 205, speaker 210 and electronics 200 read on “multimedia adapter”, microphone 205 is mounted inside element 40 which is part of the chest piece; speaker 210 is also mounted inside element 40; electronics 200, detailed in figure 8 and column 4 lines 53-64, has sound recorder 610 which is connected by wire (an inherent feature) to the microphone and speaker, and the main body 35 holds the microphone 205, speaker 210 and wired connector within the stethoscope. As disclosed in column 5 lines 10-16, sound recorder 610 is used to record and playback sound which reads on “whereby said multimedia adapter will enable said acoustic stethoscope to be used for sound recording and playback”.

Regarding **claim 2**, the microphone 205, speaker 210 and the inherent wires are located in the main body 35 which reads on “the multimedia adapter of claim 1 wherein said

microphone, speaker and connector are mounted inside a chest piece attached to said acoustic stethoscope.”

Regarding **claim 8**, column 1 lines 43-46 disclose that the recording circuit is digital. Column 5 lines 10-16 disclose that the sound recorder holds over 1 million words x 1 bit which reads on “the recording device of claim 1 selected from a group consisting of a tape recorder, a digital recorder, a personal computer, a PDA, a handheld computer, and a tablet PC.”

Regarding **claim 11**, figure 8 and column 4 lines 53-62 disclose that the sounds from the microphone 205 are filtered by band pass filter 602 and subsequently amplified by power amplifier 606 through speaker 210 which reads on “the recording device of claim 1 playing back amplified and filtered sound”.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over DesLauriers in view of Kempka, US Patent 4,783,813 (hereafter referenced as Kempka). DesLauriers does not disclose that the “microphone, speaker, and connector are mounted inside a housing incorporated into the tubing of said acoustic stethoscope.” In figures 1 and 3-5, Kempka discloses an electronic sound amplifier stethoscope comprising chest piece 12; tubes 14, 17; and coupler housing 13 which contains microphone 44, speaker 51 and inherently electrical wires for transmitting the sounds from microphone 44 to speaker 51 which reads on “microphone, speaker

and connector are mounted in a housing incorporated into the tubing of said acoustic stethoscope.” Column 1 line 25 – column 2 line 8 suggest that the placement of the electronic components in the housing 13 better eliminates acoustical and electronic noise than would be attained with the microphone located in the acoustic diaphragm portion of the stethoscope, for example. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the apparatus of DesLauriers by incorporating the microphone 205, speaker 210 and the wired connection to the recorder 610 in the tubes 25 inside a housing, per the teachings of Kempka, for the purpose of reducing noise picked up during stethoscope examination.

8. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shyu in view of Holmes et al, US Patent 6,636,749 (hereafter referenced as Holmes).

Regarding **claim 5**, Shyu does not disclose the “wireless protocol selected from a group consisting of a Bluetooth protocol and a Wi-Fi protocol”. Holmes discloses an apparatus for providing wireless protocol capability to a wireless device comprising a Bluetooth device 126 and Bluetooth module 106. Column 4 lines 5-10 disclose that the device 126 can be any device that has Bluetooth capability. Column 4 line 65 – column 5 line 13 also discloses that Bluetooth module 106 includes components that allow it to facilitate communication between the device 126 and a wireless phone 110. Column 4 lines 14-22 further discloses that the Bluetooth protocol is used to standardize wireless transmission between a wide variety of devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the modulation transmission/reception method of sound signals of Shyu with the Bluetooth protocol, as taught by Holmes, for the purpose of producing a stethoscope system that

could be capable of communicating with a broad range of devices that embrace the Bluetooth standard, thereby increasing its usefulness.

Regarding **claim 6**, column 5 lines 13-19 of Holmes discloses that the Bluetooth module 106 may employ the headset profile for enabling the wireless phone 110 to accept audio input while providing authentication and data security. It would have been obvious to one of ordinary skill in the art at the time of invention to use a headset profile in the modified Shyu apparatus as applied above, thereby providing the feature of “a headset profile is used to transmit data to and from the recording device”, for the purpose of decreasing the susceptibility of unauthorized access to sounds transmitted from the stethoscope to the recorder.

9. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shyu in view of Bredesen et al, US Patent 5,213,108 (hereafter referenced as Bredesen ‘108). Shyu does not disclose “the recording device of claim 1 visualizing the sound in both time and frequency domains.” However, it was well known in the art of stethoscope and auscultation to visually display body sounds, as evidenced by Bredesen ‘108. In column 1 lines 36-47, Bredesen ‘108 discloses that body sounds are difficult to hear and visual display of the detected body sounds can assist medical professionals in analyzing and diagnosing abnormal sounds. Figure 1 discloses a visual display stethoscope comprising electronic display module 130 which is used to record, analyze and display body sounds through LCD unit 138. Column 12 lines 10 – 22 disclose that the LCD unit 138 can display a visual representation of the analog body sounds in the time domain and in the frequency domain. It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a visual display for “visualizing sound in

both time and frequency domains", per the teachings of Bredesen, in the recorder device 40 of Shyu for the purpose of improving the diagnostic capability of the device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton

btp

BRIAN PENDLETON
PATENT EXAMINER